BRYANT'S SAVANNAH SPARROW (*Passerculus sandwichensis alaudinus*)

Sam D. Fitton, Bureau of Land Management, 20 Hamilton Court, Hollister, CA 95023; sfitton@ca.blm.gov.

Criteria Scores

Population Trend	Range Trend	Population Size	Range Size	Endemism	Population Concentration	Threats
5	0	2.5	10	10	0	10

Special Concern Priority

Currently considered a Bird Species of Concern (year round), Third Priority. No subspecies were included on the original Bird Species of Special Concern list (Remsen 1978), and the species was not included in that list. Not included on CDFG=s (1992) unprioritized list.

Breeding Bird Survey Statistics for California

Data inadequate for trend assessment (Sauer et al. 2000).

General Range and Abundance

The species is found throughout North America primarily in open habitats (AOU 1998). Seventeen subspecies are generally recognized; some are widespread and numerous over wide ranges while others are extremely local and scarce (Wheelwright and Rising 1993). While the majority of subspecies and individuals are migratory some, especially taxa restricted to the coast of California, are presumed to be sedentary, such as the Bryant=s savannah sparrow. This taxon is endemic to California occurring from Humboldt Bay south along the coast to and including Morro Bay (AOU 1957). Grinnell and Miller (1944) referred to this taxon as *Passerculus sandwichensis bryanti.* Subspecific distributional limits need further study for this taxon to the north where *P. s. brooksi* occurs, possibly as close as Trinidad, California and northward to southwest British Columbia, and to the south where savannah sparrows occurring around Morro Bay are variously treated as either *P. s. alaudinus* (AOU 1957) or *P. s. beldingi* (Wheelwright and Rising 1993). Wheelwright and

Rising (1993) recommend calling birds along the coast north of Morro Bay *P. s. anthinus* rather than *P. s. alaudinus* and *P. s. brooksi.*

Seasonal Status in California

Occurs as a year-round resident; breeding season extends from late April to early July; observed to withdrawal from higher elevation grassland/balds during inclimate winter weather in Humboldt County (Anthony Desch, pers. comm., Fitton pers. observ.).

Historical Range and Abundance in California

Grinnell and Miller (1944) described the Bryant=s savannah sparrow as a Acommon≅ resident, locally Aabundant,≅ of the coastal strip in tidal marshes and grasslands in the coastal fog belt. Within the tidal marshes, most densely populating *Salcornia* (pickleweed) and placing nests in coarse vegetation above all but the highest spring tides (Grinnell and Miller 1944). The taxon secondarily occurred in grassy uplands apparently favoring moister seeps and swales (Grinnell and Miller 1944).

Recent Range and Abundance in California

This taxon occupies the same approximate range as prior to 1944 (Dobkin and Granholm 1990). Coastal marshes and grasslands have declined within the taxon=s range no doubt reducing available habitat. More breeding locales above the fog belt have been documented since 1944, for example in Humboldt (up to 2800 feet), and in Monterey counties (A. Desch pers. comm., Roberson and Tenney 1993), with individuals seeming to favor more mesic conditions as originally described by Grinnell and Miller (1944). Whether this represents an expansion into heretofore unsuitable or unavailable habitats or more likely a discovery of a long standing occupancy is unknown. Bryant=s savannah sparrow was recorded historically at Point Lobos, Monterey County (Grinnell and Miller 1944) but none were found during the breeding bird atlas survey period, 1988 to 1992 (Roberson and Tenney 1993). This taxon=s habitat may have suffered disproportionally during saltmarsh

conversion due to its tendency toward utilizing the higher portions of marshes, the areas easier for humans to develop (Shuford 1993). Adjacent to Humboldt Bay, this species breeds in extensive dairy pastures, along roads and fences, and water conveyance canals (Harris 1991). Prior to land conversion these areas would have been a matrix of suitable to unsuitable (i.e., tree covered) habitats. It is not known if the populations on these Aartificial≅ habitats are self-sustaining and, therefore, if these increases in areal extent of habitat have had a neutral, negative or beneficial local affect.

Ecological Requirements

This taxon occupies low tidally influenced habitats and adjacent ruderal areas as well as moist grasslands within and just above the fog belt. Bayshore habitats are comprised primarily of broad expanses of pickleweed, five to 10 feet above mean sea level, above cord grass stands and as the pickleweed community merges into grassland (Gill 1972, Shuford 1993, Wheelwright and Rising 1993). Plants typical of this habitat are: *Salcornia*, *Allenrolfia*, *Atriplex*, *Suaeda*, and *Distichlis* (Wheelwright and Rising 1993). Adjacent to saltmarshes this taxa also occupies weedy spoil areas, canal banks, and bottomland pastures (Gill 1972, S. Harris pers. comm). In the moist upland grasslands this taxa occurs where herbaceous vegetation is relatively short, with no or little woody plant cover. A moist swale or drainage is often present but not necessary. Drier upland grasslands, especially in the interior coast ranges, are generally avoided by this species. Bare ground, whether provided by tidal mudflats or upland interstitial areas between clumps of vegetation appear to be an important component to occupied habitat (Shuford 1993). Nests are located in dense cover close to the ground. Presumably such dense cover is important for predator avoidance. Singing takes place near ground level or preferentially on an elevated and more exposed perch (Wheelwright and Rising 1993). These elevated perches can be in the form of elevated clumps of grass or herbaceous vegetation, scattered low shrubs and trees, or a large variety of human-made structures such as

fences, posts, pipes, and machinery. It has been noted by Gill (1972), and Wheelwright and Rising (1993) that this species occurs at higher densities in coastal marshes than in any other habitat. Presumably this gives some insight into the ecological requirements of the species. However, during the Marin Breeding Bird Atlas, Shuford (1993) found the species to be more locally distributed in the coastal and bay marshes than in the fog belt grasslands.

Savannah sparrows are primarily insectivores during the breeding season and graminivores during winter with the annual average being close to 50% of each (Wheelwright and Rising 1993). Typical prey in the breeding season are: insect eggs, larval and adult insects, small spiders, small mollusks, millipedes, amphipods, isopods, decapods, mites, seeds and fruit (Wheelwright and Rising 1993). In winter, seeds and fruits are primarily utilized with insects taken as available (Wheelwright and Rising 1993). Differences in food preferences by habitat, bayshore versus moist upland grassland, are not documented.

It is also not known to what extent winter food and cover requirements differ from the breeding season. The influx of several other subspecies of savannah sparrows into breeding and adjacent habitats greatly complicates making general observations of habitat use for this taxon. Savannah sparrows in the high elevation prairies of Northern California continue to concentrate at moist areas outside the breeding season, but leave temporarily during periods of extended snow cover, returning shortly after most of the snow has melted (A. Desch pers. comm.). Which subspecies these over-wintering birds belong to is not known.

Threats

The primary threats to this taxon are in loss or alteration of habitat, increased fragmentation and islandization of occupied areas, and contamination of habitat. This taxon is presently considered a sedentary resident. As such, it does not likely possess the ability or inclination to move from one breeding area to another. The likelihood of individuals making such movements presumably decreases with increasing distance between occupied areas. This residential tendency potentially

increases the detrimental effects of habitat loss. Not only are birds unlikely to go from one area of occupancy to another but the odds of such movements are reduced when local breeding areas are extirpated, causing greater intervening distances to be traveled. It isn=t known how frequently this taxon moves between occupied areas, such as within a large inhabited area as the San Francisco Bay or between areas of occupancy, for example between Morro and Monterey Bays.

Historically, coastal habitats have been disproportionally developed for human use. Fortunately, several laws now exist that seek to protect coastal environments. However, these measures have not been sufficient to cease habitat conversion to urban, agricultural or industrial uses. Besides reducing available habitat and making linkages between occupied breeding areas difficult to maintain, habitat loss also reduces the size of the effected population making it more susceptible to stochastic events such as drought, flooding, disease and contaminate spills (Soule 1987). Grassland habitats have suffered less habitat destruction than marshlands in coastal California (Shuford 1993). Grasslands often revert to woody species dominance when parks are created because livestock are usually removed and fire is often suppressed or difficult and expensive to utilize as a vegetation management tool. Also, in some grassland areas, large ranches are being subdivided into smaller acreage ranchettes. This also changes land uses often to the detriment of grassland birds.

Native Americans are thought to have utilized fire to maintain grasslands. The Bryannt=s savannah sparrow may have inadvertently benefitted from this practice. Since European settlement, large grassland areas have been converted to agriculture, unsuitable for this species. Water shortages, market forces and ownership changes can lead to abandonment of these agricultural areas. The natural course of revegetation is not necessarily appropriate for this species. Because of the long history of frequent soil disturbance and the existence of non-native invasive plant species, the resulting habitat is often a thick weedy field, too dense and tall for this taxon.

Management and Research Recommendations

- ∃ restore, enhance and protect suitable saltmarsh habitat
- ∃ protect upland grassland habitat
- ∃ determine extent of seasonal movement
- ∃ determine probabilities of immigration between occupied habitat areas
- ∃ determine seasonal diet
- ∃ determine the genetic distinctiveness of this taxon

Monitoring Needs

- ∃ The state=s breeding habitat should be mapped and monitored for changes in areal extent
- ∃ A subset of breeding populations should be monitored statewide, stratified by habitat type
- ∃ Determine the statewide distribution and calculate distances between populations

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Anthony Desch and Stanley Harris provided important information on habitat use of this taxon in Humboldt County, California.

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